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SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			LIANG, LEONARD S	
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**MAILED**

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**GROUP 2800**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/911,811  
Filing Date: July 24, 2001  
Appellant(s): HETZER ET AL.

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Steven H. Noll  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 04/26/06 appealing from the Office action mailed

12/21/05

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

A statement identifying the related appeals and interferences is contained in the brief.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

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**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,791,435	SMITH ET AL.	12-1988
5,107,276	KNEEZEL ET AL.	4-1992
5,812,156	BULLOCK ET AL.	9-1998
5,513,563	BERSON	5-1996

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-12 are rejected under 35 U.S.C. 103(a).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US Pat 4791435) in view of Kneezel et al (US Pat 5107276).

Smith et al discloses:

- {claim 1} An arrangement for determining data for a warm-up cycle of an ink jet printhead (figure 2A; abstract); an ink cartridge having an ink jet printhead and a

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drive unit connected to the ink jet printhead for heating, measuring a temperature of, and driving the ink jet printhead (abstract; column 1, line 35-column 2, line 12); a control unit connected to the drive unit for controlling the drive unit (figure 1, reference 4); a memory accessible by the control unit having a first memory area in which warm-up data are stored in re-writable fashion (figure 2A, reference Data Processing Section; inherently has RAM); a second memory area in which data representing at least two predetermined conditions are stored, the at least two predetermined conditions being selected from the group consisting of temperature-related conditions, history-related conditions and user-related conditions (figure 2A, reference ROM Section; use profile serves as one predetermined condition and temperature serves as second predetermined condition)

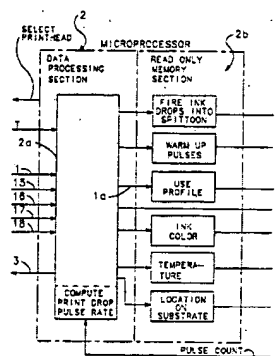


FIG 2A

- {claim 10} wherein the drive unit includes a sensor for measuring the temperature of the ink jet printhead, the sensor generating sensor data representing the temperature, and wherein the control unit is programmed to

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interrogate the sensor data via the drive unit for determining the warm-up data  
(abstract; column 1, line 35-column 2, line 12)

- {claim 11} a user interface connected to the control unit for entering a user request for the fast start and a communication link, connected to the control unit, to a remotely disposed telepostage data center which, upon receipt of the user request, transmits a parameter for the fast start, including an identification of the user, to the control unit, and wherein the control unit is programmed to store the parameter in the memory and to employ the user related conditions, corresponding to the user identified by the parameter, as one of the at least two conditions for determining the warm-up data for the fast start (figure 2A; column 1, line 35-column 2, line 37; column 4, lines 16-31)

Smith et al differs from the claimed invention in that it does not disclose:

- {claim 1} a sensor connected to the drive unit for measurement of ambient temperature; and the control unit being programmed to implement at least one measurement of the ambient temperature with the sensor, and to determine warm-up data for a fast start, executed in less than 30 seconds, for a current warm-up cycle dependent upon the ambient temperature and dependent on the at least one predetermined condition

Kneezel et al discloses:

- {claim 1} a sensor connected to the drive unit for measurement of ambient temperature (figure 5A, reference 55; column 8, lines 6-11); the control unit being programmed to implement at least one measurement of the ambient

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temperature with the sensor, and to determine warm-up data for a fast start, executed in less than 30 seconds, for a current warm-up cycle dependent upon the ambient temperature and dependent on the at least one predetermined condition (column 8, lines 1-30; column 12, lines 15-31)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Kneezel et al into the invention of Smith et al. The motivation for the skilled artisan in doing so is to gain the benefit of maintaining the printhead at a substantially constant temperature.

Claims 2-4, 6-8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US Pat 4791435) in view of Kneezel et al (US Pat 5107276), as applied to claim 1 above, and further in view of Bullock et al (US Pat 5812156).

Smith et al discloses:

- {claim 2} said memory is a first memory (figure 2A)

Smith et al, as modified, differs from the claimed invention in that it does not disclose:

- {claim 2} a second memory disposed on the ink cartridge, in which identification data uniquely identifying the ink cartridge, and data representing further predetermined conditions, are stored, and wherein the warm-up data stored in the first memory are allocated to the identification data
- {claim 3} wherein the ink cartridge has a serial number uniquely associated therewith, and wherein the identification data includes the serial number

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- {claim 4} wherein the ink cartridge has a manufacture identification number uniquely associated therewith, and wherein the identification data includes the manufacture identification number
- {claim 6} wherein the memory is disposed on the ink cartridge and wherein the second memory area additionally contains identification data uniquely identifying the ink cartridge and data representing further predetermined conditions allocated to the identification data, and wherein the control unit is programmed to interrogate the memory to determine the warm-up data employing the further predetermined conditions allocated to the identification data
- {claim 7} wherein the ink cartridge has a serial number uniquely associated therewith, and wherein the identification data includes the serial number
- {claim 8} wherein the ink cartridge has a manufacture identification number uniquely associated therewith, and wherein the identification data includes the manufacturer identification number
- {claim 12} a date clock module connected to the control unit by generating history-related data as the history-related conditions

Bullock et al discloses

- {claim 2} a second memory disposed on the ink cartridge, in which identification data uniquely identifying the ink cartridge, and data representing further predetermined conditions, are stored (figure 1B, reference 28; column 4, lines 14-50)



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- {claim 3} wherein the ink cartridge has a serial number uniquely associated therewith, and wherein the identification data includes the serial number (column 4, line 41)
- {claim 4} wherein the ink cartridge has a manufacture identification number uniquely associated therewith, and wherein the identification data includes the manufacture identification number (column 4, line 25)
- {claim 6} wherein the memory is disposed on the ink cartridge and wherein the second memory area additionally contains identification data uniquely identifying the ink cartridge and data representing further predetermined conditions allocated to the identification data (figure 1B, 4, reference 28)
- {claim 7} wherein the ink cartridge has a serial number uniquely associated therewith, and wherein the identification data includes the serial number (column 4, line 41)
- {claim 8} wherein the ink cartridge has a manufacture identification number uniquely associated therewith, and wherein the identification data includes the manufacturer identification number (column 4, line 25)
- {claim 12} a date clock module connected to the control unit by generating history-related data as the history-related conditions (column 4, lines 36-38, 49, 57; column 5, lines 2-4; manufacture day/year and usage time naturally suggests date clock module)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Bullock et al into the invention of modified Smith et al.

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The motivation for the skilled artisan in doing so is to gain the benefit of controlling values, which enable the printer to maintain high quality print media output. The combination naturally suggests the warm-up data stored in the first memory is allocated to the identification data and the control unit is programmed to interrogate the memory to determine the warm-up data employing the further predetermined conditions allocated to the identification data.

Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US Pat 4791435) in view of Kneezel et al (US Pat 5107276) and Bullock et al (US Pat 5812156), as applied to claims 2-4, 6-8, and 12 above, and further in view of Berson (US Pat 5513563).

Smith et al, as modified, discloses:

- {claims 5 and 9} wherein the ink cartridge has a serial number and a manufacturer identification number uniquely associated therewith (as taught in Bullock et al column 4, lines 25, 41)

Smith et al, as modified, differs from the claimed invention in that it does not disclose:

- {claims 5 and 9} wherein the control unit comprises a security module for forming a code word by encryption of the serial number and the manufacturer identification number, and wherein the control unit stores the code word in the second memory as at least a portion of the identification data

Berson discloses:

- {claims 5 and 9} encrypting serial number (column 3, lines 18-22)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Berson into the invention of modified Bullock et al so that serial numbers could be encrypted. The motivation for the skilled artisan in doing so is to gain the benefit of providing verifiable security (column 1, lines 46-47). The combination naturally suggests encrypting manufacture identification numbers and the control unit storing the code word in the second memory as at least a portion of the identification data.

#### **(10) Response to Argument**

The appellant argues: "Appellants respectfully submit the Smith et al reference is extremely general and uninformative as to how, or even if, information contained in the read-only memory section 2b of the microprocessor 2 is used by the pulse generator 24a to generate pulses that are supplied to the print head 21 for any purpose, much less during a warm-up cycle...Therefore, it is clear that the data processing section 2a of the microprocessor 2 does not and cannot make use of any of the information stored in the read-only memory section 2b...There is no indication whatsoever in the Smith et al reference that anything other than the sensed temperature is used to determine or set the pulse width of the warm-up pulses in the pulse generator 24a."

The examiner respectfully disagrees with these assertions. In addition to the disclosure of the various information stored in the read-only memory section 2b of figure 2A, Smith et al quite explicitly states "**The number of pulses used in this warm up process is based on the nozzle's temperature, the location of the nozzle in the substrate, the dye (color) in the nozzle, and the use profile of the nozzle** (column 2, lines 8-12; emphasis added)." When combined with the teaching from the figures, this clearly demonstrates that conditions other than the sensed

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temperature (i.e. ink color, use profile) are used to control the generation of pulses. The appellant completely ignores Figure 2B (a continuation of Figure 2A), which explicitly shows all these conditions being used by pulse generator 24a. One of ordinary skill in the art would recognize these teachings of Smith et al as being sufficiently detailed to read on the broadest reasonable interpretation of the claimed invention. In light of these clear and explicit teachings, the examiner is unsure how the appellant can claim that Smith et al is extremely general and uninformative. Smith goes into considerable detail about pulse control. On the contrary, the claimed invention recites absolutely nothing about pulse control; all the claimed invention recites is determining warm-up data, which is dependent upon at least two predetermined conditions. Furthermore, Smith et al discloses, "In other circumstances, if the printhead exists in a low temperature situation unacceptable for printing and **the use profile is such that no viscous ink plugs exist in the nozzle, warm up pulses for the printhead may be selected.** Warm up pulse instructions from the microprocessor, initiated by the data processing section accessing the warm up pulse data of the read only memory section, provides instructions to the pulse width control section of the pulse generator 24a to produce warm up pulses...**In the event of a viscous plug, warming pulses and/or spitting of the nozzles may be employed** (column 5, line 67-column 6, line 16; emphasis added; notice how Smith et al describes how warm-up pulses are produced in the presence of viscous plugs and how viscous plugs are present in the presence of certain factors concerning a predetermined condition such as use profile)." The examiner therefore contends that the appellant's assertion that "there is no disclosure or suggestion in that reference that anything other than this sensed temperature is used to set the pulse width of the warm-up pulses," is false.

The appellant further argues, "Therefore, even if the Smith et al reference were modified in accordance with the teachings of Kneezel et al, to use an ambient temperature sensor in place of, or in addition to, the temperature sensor TS disclosed in the Smith et al reference, there still is no teaching or suggestion in either of those references to do anything except use the ambient temperature, by itself, to set a pulse width of pulses that may (possibly) be used in a warm-up cycle. There is no teaching in either the Smith et al or Kneezel et al references to make use of the ambient temperature to determine warm-up data in combination with (dependent on) at least two predetermined conditions from the aforementioned list of predetermined conditions, as set forth in claim 1 of the present application. Appellants respectfully submit it is only with the benefit of hindsight after reading the present disclosure that the Examiner has assumed that either the Smith et al reference or the Kneezel et al reference makes use of some sort of combination of the ambient temperature and at least two predetermined conditions for determining warm-up data for a fast start."

This argument is based on the premise that Smith et al cannot be used as valid art. However, since the examiner has already established that Smith et al is valid art, all Kneezel is needed for is its teaching of an ambient temperature sensor. Because Smith et al already teaches a warm-up cycle, Kneezel does not need to. Smith also teaches temperature detection at the head, which may be construed by some as ambient temperature. However, the examiner chose to use the more common definition of ambient temperature, which is temperature of the air surrounding the head. Under this definition, Smith did not disclose sensing ambient temperature. Kneezel did. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the ambient temperature sensed in Kneezel into Smith et al as

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yet another predetermined condition that affects warm-up pulsing (much like ink color, use profile, etc...) This is supported by the fact that the ambient temperature sensor is connected to a pulse width controller. The benefits of detecting ambient temperature and the effect of ambient temperature on printing are well known to one of ordinary skill in the art. The combination is not one that is made in view of hindsight. Rather, the combination is obvious on its face, especially in light of the validity of Smith et al.

The appellant also responded to some arguments that the examiner previously made. Specifically, the appellant asserted, "Appellants submit that the citations by the Examiner support Appellants' arguments, rather than refuting them. The passage cited by the Examiner, although making mention of the factors emphasized by the Examiner, still provides no guidance whatsoever to a person of ordinary skill in the art as to how those factors should be used...Clearly, there is no teaching in the Smith et al reference that rises to the level of detail of the subject matter of claim 1 on appeal."

The examiner has already refuted the argument regarding the validity of Smith et al. However, the examiner would also like to note that the claimed invention does not recite specific details of **how** predetermined conditions affect the warm-up cycle; it only states that the warm-up cycle is affected (emphasis added). Therefore, since the appellant's own claimed invention does not recite any level of detail as to how the predetermined conditions affect the warm-up cycle, it is not appropriate for the appellant to narrow the scope of the claimed invention by trying to apply this narrow standard to Smith et al. Further, the examiner disagrees with the appellant's assertions and maintains that Smith et al does indeed disclose how a predetermined condition affects the warm-up cycle, as shown above.

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With respect to the appellant's other arguments (Rejection over Smith et al, Kneezel et al, and Bullock et al and rejection over Smith et al, Kneezel et al, Bullock et al, and Berson), they are all based on the principle argument concerning the validity of Smith et al in view of Kneezel. The examiner has addressed this principle argument. Therefore, all other arguments are now also considered responded to.

**(11) Related Proceeding(s) Appendix**


No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.


For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

*Leonard Liang*

lsf LSL  
June 7, 2006

Conferees:   
Stephen Meier

  
Darren Schubert

  
**STEPHEN MEIER**  
**SUPERVISORY PATENT EXAMINER**

SCHIFF, HARDIN LLP  
Patent Department  
6600 Sears Tower  
233 South Wacker Drive  
Chicago, Illinois 60606